

OPTICAL DEVICE, METHOD OF CLEANING THE SAME,
PROJECTION ALIGNER, AND METHOD OF PRODUCING THE SAME

ABSTRACT OF THE DISCLOSURE

5 A reticle (R) is irradiated with an ArF excimer laser
beam to transfer a pattern on the reticle (R) onto a wafer
(W) through a projection optical system (PL). Each of a
plurality of illuminating lens units (2) arranged in the
illuminating optical passage has a barrel containing a
plurality of lenses, and caps are so provided as to be
10 spaced from the lenses at both ends. Lens chambers among
the lenses are filled with an inert gas, and the spaces
between the caps and the lenses are also filled with an
inert gas. When the illuminating lens unit (2) are housed
in and illuminating optical path housing, the caps are
15 removed while purging the spaces. Therefore, the lenses at
both ends are prevented from being contaminated and the
transmittance of the optical lens device for exposure with
light having a wavelength of shorter than 300 nm is
prevented from lowering.